

## Abstract

A system and method for coordinating timing between simulation of a system and measurement and/or control of the system. A measurement/control loop comprising a measurement/control program, a simulation program, and an execution coordination kernel is described. The simulation program may be operable to simulate any of various types of systems. The measurement/control program may provide measurement/control logic for measuring various variables associated with the simulated system. The execution coordination kernel is responsible for coordinating the execution and time advancement of the measurement/control and simulation programs. The execution coordination kernel may be operable to intercept I/O calls produced by the measurement/control program and the simulation program. If the execution coordination kernel determines that the system is in simulation mode, the calls may be routed to software routines instead of to the I/O hardware.